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CONSTRUCTION OF A RADIO-TELESCOPE PROTOTYPE IN THE 12 GHZ BAND

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Radio astronomy is important in the branch of the Astronomy that studies the celestial bodies through their emissions in the domain of the radio waves, to obtain information of these bodies, astronomers must design new types of telescopes that can capture radiation at different wavelengths, including radio telescopes.

This paper presents the construction of a prototype of an educational radio telescope, which is made using materials that are easily accessible and inexpensive. The construction of a radio telescope, will allow to carry out research in the field of radio astronomy, since at present it has not been possible to penetrate this branch due to the lack of an adequate equipment in the University of Nariño.

The issues that are addressed in the construction of this instrument, its use and the analysis of the data, are very varied and with a high content of multidiciplinariety, gathering basic topics in areas such as astrophysics, physics, electronics, computing, mechanics, which are necessary for Concrete the efficient use of this instrument.

For the development of the project, it counts with the advice of the director and researcher of the astronomical observatory of the University of Nariño MSc. Alberto Quijano Vodniza and Dr. Abraham Luna Castellanos of the National Institute of Astrophysics, Optics and Electronics INAOE. In addition to the construction of radiotelescope the final phase consists of the storage and analysis of data obtained with the observation of some celestial bodies that comply with The range in the 12 GHz band for study.

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LATIN AMERICAN ASTRONOMERS AND THE INTERNATIONAL ASTRONOMICAL UNION

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Selected aspects of the participation of the Latin American astronomers in the International Astronomical Union are presented: Membership, Governing bodies, IAU meetings, and other activities.

The Union was founded in 1919 with 7 initial member states, soon to be followed by Brazil. In 1921 Mexico joined, and in 1928 Argentina also formed part of the Union, while Chile joined in 1947. In 1961 Argentina, Brazil, Chile, Mexico and Venezuela were already member countries. At present (October 2016) 72 countries contribute financially to the Union. The Union lists 12,391 professional astronomers as individual members; of those, 692 astronomers work in Latin America and the Caribbean, from 13 member states (Argentina, Bolivia , Brazil, Chile, Colombia, Costa Rica, Cuba, Honduras, Mexico, Panamá, Perú, Uruguay and Venezuela) as well as from Ecuador and Puerto Rico. This group comprises 5.58 % of the total membership, a figure somewhat lower than the fraction of the population in the region, which is 8.6 % of the world population. Of the Latin American members, 23.4 % are women and 76.6 % are men; slightly higher than the whole membership of Union, which is of 16.9 %. In the governing bodies it can be mentioned that there have been 2 Presidents of the Union (Jorge Sahade and Silvia Torres-Peimbert), 7 VicePresidents (Guillermo Haro, Jorge Sahade, Manuel Peimbert Claudio Anguita, Silvia Torres-Peimbert, Beatriz Barbuy, and Marta G. Rovira). The IAU meetings held in the region, include 2 General Assemblies (the 1991 XXI GA took place in Buenos Aires, Argentina and the 2009 XXVIII GA, in Rio de Janeiro, Brazil), 15 Regional Meetings (in Argentina, Brazil, Chile, Colombia, Mexico, Venezuela and Uruguay), 29 Symposia (in Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Peru and Mexico), 5 Colloquia (in Argentina and Mexico), 8 International Schools for Young Astronomers (in Argentina, Brazil, Cuba, Honduras and Mexico), and 11 projects sponsored by the Office of Astronomy for Development.

In conclusion, the engagement of the Latin American astronomers with the Union has been fruitful and significant.

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